

CLAIMS

I/We claim:

- [c1] 1. A package assembly for an electronic device, comprising:
a substrate having a first surface with a first plurality of contact pads and a second plurality of contact pads, a second surface with a plurality of connection pads, and a plurality of via holes connecting said first plurality of contact pads and said plurality of connection pads; and
a buffer layer between said substrate and said electronic device, and a surface of said electronic device having electrodes being opposite to said first surface of said substrate, said buffer layer having an opening to expose said first plurality of contact pads, wherein said buffer layer surrounds the edge of said electronic device and a fastening face of said edge of said electronic device and said buffer layer is unflattened.
- [c2] 2. The package assembly in claim 1 wherein the material of said substrate is selected from the group consisting of an Al substrate, a ceramic substrate, a silicon substrate, a polymer substrate, and a glass substrate.
- [c3] 3. The package assembly in claim 1 wherein said buffer layer is selected from the group consisting of an organic film layer and a polymer film layer.
- [c4] 4. The package assembly in claim 1 wherein said buffer layer is conductive.
- [c5] 5. The package assembly in claim 1 wherein said opening in said buffer layer is formed by photolithography, or laser.

- [c6] 6. The package assembly in claim 1 wherein said opening in said buffer is preformed.
- [c7] 7. The package assembly in claim 1, further comprises a conductive layer formed on said electronic device.
- [c8] 8. The package assembly in claim 1 wherein said buffer layer has a thickness of 30–200 microns.
- [c9] 9. The package assembly in claim 1 wherein said fastening face of said edge of said electronic device and said buffer layer has a corner.
- [c10] 10. The package assembly in claim 1 wherein said electronic device and said substrate are bonded by a bonding process selected from the group consisting of a thermocompression bonding, a ultrasonic bonding, a thermosonic bonding, soldering bonding, and adhesive bonding.
- [c11] 11. The package assembly in claim 1 wherein said electronic device is a surface acoustic wave device.
- [c12] 12. A package assembly for a plurality of electronic devices, comprising:
a substrate having a first surface with a first plurality of contact pads and a second plurality of contact pads, a second surface with a plurality of connection pads, and a plurality of via holes connecting said first plurality of contact pads and said plurality of connection pads; and
a buffer layer having a plurality of openings to expose said first plurality of contact pads, and said plurality of electronic devices being on said plurality of openings respectively, wherein a respective surface of said plurality of electronic devices having electrodes is opposite to said first surface of said substrate, said buffer layer surrounds the

edge of said plurality of electronic devices, and fastening faces of said edge of said plurality of electronic devices and said buffer layer are unflattened.

[c13] 13. The package assembly in claim 12 wherein the material of said substrate is selected from the group consisting of an A1 substrate, a ceramic substrate, a silicon substrate, a polymer substrate, and a glass substrate.

[c14] 14. The package assembly in claim 12 wherein said buffer layer is selected from the group consisting of an organic film layer and a polymer film layer.

[c15] 15. The package assembly in claim 12 wherein said buffer layer is conductive.

[c16] 16. The package assembly in claim 12 wherein said plurality of openings in said buffer layer is formed by photolithography, or laser.

[c17] 17. The package assembly in claim 12, further comprises a conductive layer formed on said plurality of electronic devices.

[c18] 18. The package assembly in claim 12 wherein said buffer layer has a thickness of 30-200 microns.

[c19] 19. The package assembly in claim 12 wherein said fastening faces of said edge of said plurality of electronic devices and said buffer layer have a corner respectively.

[c20] 20. The package assembly in claim 12 wherein said plurality of electronic devices and said substrate are bonded by a bonding process selected

from the group consisting of a thermocompression bonding, a ultrasonic bonding, a thermosonic bonding, soldering bonding, and adhesive bonding.

[c21] 21. The package assembly in claim 12 wherein said plurality of electronic devices is a surface acoustic wave device.

[c22] 22. A packaging method for electronic devices, comprising:
forming a buffer layer on a first surface of a substrate, said buffer layer having a first opening to expose a first plurality of contact pads on said first surface, wherein said substrate has said first surface with said first plurality of contact pads and a second plurality of contact pads, a second surface with a plurality of connection pads, and a plurality of via holes connecting said first plurality of contact pads and said plurality of connection pads; and
mounting a first electronic device on said buffer layer corresponding to said first opening, wherein a surface of said electronic device having electrodes is opposite to said first surface of said substrate, said buffer layer surrounds the edge of said first electronic device, and a fastening face of said edge of said first electronic devices and said buffer layer is unflattened.

[c23] 23. The packaging method in claim 22 wherein the material of said substrate is selected from the group consisting of an Al substrate, a ceramic substrate, a silicon substrate, a polymer substrate, and a glass substrate.

[c24] 24. The packaging method in claim 22 wherein said buffer layer is selected from the group consisting of an organic film layer and a polymer film layer.

- [c25] 25. The packaging method in claim 22 wherein said buffer layer is conductive.
- [c26] 26. The packaging method in claim 22 wherein said opening in said buffer layer is formed by photolithography, laser or preforming.
- [c27] 27. The packaging method in claim 22, further comprises a conductive layer formed on said first electronic device.
- [c28] 28. The packaging method in claim 22 wherein said buffer layer has a thickness of 30–200 microns.
- [c29] 29. The packaging method in claim 22 wherein said fastening face of said edge of said first electronic device and said buffer layer has a corner.
- [c30] 30. The packaging method in claim 22 wherein said first electronic device and said substrate are bonded by a bonding process selected from the group consisting of a thermocompression bonding, a ultrasonic bonding, a thermosonic bonding, soldering bonding, and adhesive bonding.
- [c31] 31. The packaging method in claim 22, further comprises forming a second opening on said buffer layer, mounting a second electronic device on said second opening, and said buffer layer surrounds the edge of said second electronic device.
- [c32] 32. The packaging method in claim 31 wherein said first electronic device and said second electronic device are in the same wafer.

[c33] 33. The packaging method in claim 32 wherein said first electronic device and said second electronic device are divided or half cut through a cutting process.